Singhurst, J.R. and W.C. Holmes. 2010. *Carissa macrocarpa* (Apocynaceae): New to the Texas flora. Phytoneuron 2010-19: 1-3.

CARISSA MACROCARPA (APOCYNACEAE): NEW TO THE TEXAS FLORA

JASON R. SINGHURST
Wildlife Diversity Program
Texas Parks and Wildlife Department
3000 South IH-35, Suite 100
Austin, Texas 78704 U.S.A.
jason.singhurst@tpwd.state.tx.us

WALTER C. HOLMES
Department of Biology
Baylor University
Waco, Texas 76798-7388 U.S.A.
walter_holmes@baylor.edu

ABSTRACT

Carissa macrocarpa (Eckl.) A. DC. is documented as occurring outside of cultivation in Texas. Several colonies were found growing on shell middens in Nueces County. It is suspected that seeds were dispersed from landscape plantings in the Corpus Christi area. *Carissa macrocarpa* has moderate invasive potential along the Texas coast.

KEY WORDS: Apocynaceae, *Carissa macrocarpa*, Texas, naturalized.

Carissa macrocarpa (Eckl.) A. DC. (Apocynaceae), commonly known as Natal plum, was recently documented as naturalizing in Nueces County, Texas. The species has not been previously reported outside of cultivation in Texas (Correll & Johnson 1970; Hatch 1990; Jones et al. 1997; Turner et al. 2003).

Carissa macrocarpa is native to the coastal region of Natal, South Africa. It was introduced into the United States in 1886 by the horticulturist Theodore L. Meade. In 1903, David Fairchild of the Office of Foreign Seed and Plant Introduction of the United States Department of Agriculture imported a large quantity of seeds from the Botanical Garden at Durban, South Africa. Several thousand seedlings were raised at the then Plant Introduction Garden at Miami and distributed for testing in Florida, the Gulf states and California. Extensive effort was devoted to following up on the fate of the plants in different climatic zones. *Carissa macrocarpa* was introduced into Hawaii in 1905 and over the next few years was extensively distributed throughout the islands. It was planted in the Bahamas in 1913. It first fruited in the Philippines in 1924 and is grown to a limited extent in India and East Africa. The species is valued mainly as a protective hedge, while the fruit is edible and suitable for fruit salads, cakes, puddings ice cream, pies, and tarts. The summary information above on *Carissa macrocarpa* is taken from Morton (1987).

Carissa macrocarpa (Fig. 1) was found growing on shell middens in Nueces County. It is suspected that seeds were dispersed from landscape plantings, possibly by birds, in the Corpus Christi, Texas area. Three colonies (averaging 3 x 3 meters) were documented at this site. These colonies are reproducing vegetatively with branches rooting low to the ground. Elsewhere in the USA, *Carissa macrocarpa* is known to be naturalized only in Florida, where Wunderlin and Hansen (2010) report that it occurs in seven counties.

Voucher specimen: **USA. Texas**. Nueces Co.: Padre Balli Park (Nueces County park lands), north end of Padre Island, jct of Windward and Lee Ward Drive, 17 May 2010, *Singhurst 18265* (BAYLU).

Shell middens (or shell mounds) in the mid-Gulf coast of Texas are located on the back side of dunes and are composed of shells (clams, oysters, whelks) with inter-dispersed sand. The middens support an assemblage of calciphilic plants. The dominant flora of the shell middens includes *Opuntia stricta*, *Dalea emarginata*, *Heterotheca subaxillaris*, *Indigofera miniata*, and *Yucca treculeana*. Other common associates include *Aphanostephus skirrhobasis*, *Chamaecrista fasciculata*, *Chamaesyce* sp., *Chloris* sp., *Croton punctatus*, *Cyperus* sp., *Dichanthelium* sp., *Distichlis spicata*, *Gaillardia pulchella*, *Ibervillea lindheimeri*, *Orobanche ludoviciana*, *Rhynchosia americana*, *Oenothera drummondii*, *Paspalum* sp., *Plantago hookeriana*, *Portulaca pilosa*, and *Sporobolus pyramidatus*. See Slater and Kincaid (2004) for a discussion of the botany of shell middens in Florida.

Fig. 1. *Carissa macrocarpa* (Natal plum) in Nueces County, Texas

Carissa macrocarpa (Figs 1, 2) is a vigorous, spreading woody shrub with abundant, gummy-white sap. It may reach a height of 4.5–5.5 m and an equal breadth. The branches are armed with stout, double pronged thorns of up to 5 cm long. Leaves are evergreen, opposite, broad-ovate, 2.5–5 cm long, dark green, glossy, and leathery. Flowers are sweetly fragrant, white, 5-lobed with tubes to 5 cm and are borne singly or few together at the tips of branches. The fruits are ovoid to spheroid, to 6.25 cm long and 4 cm wide. Upon ripening, the tender smooth skin turns a bright magenta-red. The fruit contains 6–16 small, flat, brown seeds.

Fig. 2. *Carissa macrocarpa* (Natal plum) in flower.

LITERATURE CITED

Correll, D.S. and M.C. Johnston. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner.

Hatch, S.L., K.N. Ghandi, and L.E. Brown. 1990. Checklist of the vascular plants of Texas. Texas Agricultural Experiment Station Pub. 1655. Texas A&M Univ., College Station.

Jones, S.D., J.K. Wipff, and P.M. Montgomery. 1997. Vascular Plants of Texas: A Comprehensive Checklist Including Synonymy, Bibliography, and Index. Univ. of Texas Press, Austin.

Morton, J. 1987. *Carissa*. Pp. 420–422, *in* J.F. Morton, Fruits of warm climates. Miami, Florida (distributed by Creative Resource Systems, Inc., Winterville, N.C.) <http://www.hort.purdue.edu/newcrop/morton/index.html>

Slater, R. and D. Kincaid. 2004. The vascular flora of five Florida shell middens. J. Torrey Bot. Soc. 131: 95–105.

Turner, B.L., H. Nichols, G.C. Denny, and O. Doron. 2003. Atlas of the Vascular Plants of Texas. Botanical Research Institute of Texas, Ft. Worth. Vol. 1: 648.

Wunderlin, R.P. and B.F. Hansen. 2010. Atlas of Florida Vascular Plants [S.M. Landry and K.N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa. <http://www.plantatlas.usf.edu/>